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Validity and Reliability of the Counseling Center Assessment of Psychological Symptoms-Japanese Version

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R. Horita, A. Nishio, A. Kawamoto, T. Sado et al.: Validity and Reliability of the CCAPS-Japanese Version

Abstract

To identify students who are struggling with mental distress and provide them with early and appropriate support, a valid and reliable multidimensional measure is required. The aim of this study was to investigate the convergent validity and the instrument's test-retest reliability of the Counseling Center Assessment of Psychological Symptoms-Japanese (CCAPS-Japanese). For validity examination, 1,627 undergraduate students were randomized into one of five groups. Each group completed one of five questionnaires comprising the CCAPS-Japanese and one, two, or three validation scales. For reliability examination, a total of 184 and 106 students completed the CCAPS-Japanese at one-week and two-week intervals, respectively. In the validity study, the highest correlation for each CCAPS-Japanese subscale was found to exist with its referent measure except for the Generalized Anxiety subscale. In the reliability study, correlation analysis showed that the scores at test and retest were significant ranging from .66 to .88. These findings suggest that the 55-item CCAPS-Japanese is applicable for use in Japanese university students.

***Keywords**:* Counseling Center Assessment of Psychological Symptoms-Japanese (CCAPS-Japanese), mental health, student counseling, convergent validity, test-retest reliability.

Mental health distress in college students–such as depression and anxiety–is considered a current worldwide problem. It has been shown that the demand for psychological services and the level of symptom severity are increasing in university counseling services in many countries. The World Health Organization World Mental Health Survey, conducted in 21 countries, reported that 20.3% of college students had positive findings for any DSM- IV disorders in the last 12 months (Auerbach et al., 2016). Xiao et al. (2017) demonstrated a significant trend of gradually increasing levels of self-reported generalized anxiety, depression, social anxiety, family distress, and academic distress in the United States (U.S.). The largest effect sizes were observed for generalized anxiety, depression, and social anxiety, using clinical data collected over five academic years (2010‑2015). Pérez-Rojas et al. (2017) revealed that the five most common presenting concerns in 1,383 college students in U.S. were anxiety (56.3%), depression (46.1%), stress (45.3%), family (31.1%), and academic performance (28.9%); 8.4% of students presented with suicidality as a concern, with an even higher percentage for cultural and sexual minority students. Additionally, Lei, Xiao, Liu, & Li (2016) indicated that the overall prevalence of depression among a total of 32,964 Chinese university students was 23.8% according to a meta-analysis of data from 1997 to 2015 in 39 studies.

Although there are no accurate national data on the prevalence of psychological symptoms or presenting concerns of university students, a similar situation has been reported in Japan. However, the Japan Student Services Organization (2019) reported that 8,770 (0.27%) students had been diagnosed with mental disorders, which was surveyed in 1,196 Japanese colleges and universities. It indicated an increase of approximately 6% compared to the previous year (2018). The breakdown of the total diagnoses was anxiety disorder/obsessive-compulsive disorder (37.6%), mood disorder (31.6%), schizophrenia (9.8%), eating disorder/sleep disorder (9.0%), and other mental disorder (12.0%). The prevalence of mental disorders according to student major was relatively high in arts (0.73%), health (excluding

medical and dentistry; 0.67%), and humanities (0.50%) (Japan Student Services Organization, 2019). According to the Japanese National University Council of Health Administration Facilities (2015), among students who were identified as "high risk" by the annual or new-student mental health screening and came for follow-up appointments (n = 1,353 from 38 national universities), the percentage of students diagnosed with mental disorders (37.8%) was double than 10 years ago (19.9%). In particular, the percentage of students diagnosed with emotional disorders (6.4%), including depressive disorder and bipolar disorder, has tripled as compared to what it was 20 years ago (2.1%). Although the number of counselors is unchanged, the number of clients per institution is increasing; therefore, this creates a difficult situation in university counseling centers in Japan. Suzuki, Sugioka, Horita, Oda, & Yamauchi (2019) reported the ratio of fixed-term and part-time counselors are increasing due to budget limitations. Thus, the increasing prevalence of mental health problems and flat staffing levels caused counseling centers to be under more pressure. To help counseling effectiveness, an accurate and quick instrument for assessing students' mental health is urgent required. A reliable and valid multidimensional instrument must be able to detect students struggling with severe mental distress early and appropriately.

Locke et al. (2011) has developed the Counseling Center Assessment of Psychological Symptoms (CCAPS) as a mental health assessment and screening instrument for university students. The CCAPS was designed to assess multiple areas of psychological distress simultaneously at intake and also evaluate a client's distress at each subsequent appointment through to termination. The original version has 62 items (CCAPS-62) with eight subscales, including Depression, Generalized Anxiety, Social Anxiety, Eating Concerns, Hostility, Family Distress, Academic Distress, and Substance Use. In addition, a shorter version was developed with 34 items (CCAPS-34) (Locke et al., 2012) for centers that are short on time during intake and/or for repeated measurement during treatment. Locke et al. (2011) demonstrated the quality

of the CCAPS-62 with rigorous factor structure, good internal consistency, strong convergent validity, and adequate test-retest stability. Over the last several years, the CCAPS has been translated into a variety of languages as the interest in college student mental health has grown globally along with the parallel need for systematic assessment of student's mental health distress in treatment centers that are struggling with increased demand. For example, Ratanasiripong et al. (2015) developed a Thai version of the CCAPS, using a 41-item six-factor model.

Horita et al. (2019) conducted a pilot study to develop the CCAPS-Japanese version. Participants were 2,758 nonclinical undergraduate students from 11 Japanese universities, including three national universities and eight private universities. The model's structural equivalence with the original CCAPS eight-factor version was examined using confirmatory factor analysis (CFA). As a result of the CFA, seven items were eliminated due to low factor loadings (< .40). After these items were removed, the subsequent CFA showed adequate model fit (root mean square error of approximation [RMSEA] = .046, comparative fit index [CFI] = .908, and standardized root mean square residual [SRMR] = .098) and acceptable-to-good internal consistency of subscale scores (α= .61–.89). In addition, the correlation among subscales was demonstrated to be the corresponding tendency as in those of Locke et al. (2011), so the construct validity of the CCAPS-Japanese has been established. Thus, the 55-item, eight-factor model was confirmed as the CCAPS-Japanese. The eight factors were the same as in the CCAPS-62 except for Substance Use. Since the Substance Use subscale only has a question about drinking, it was named Alcohol Use, which is the same adjustment made in the equivalent CCAPS-34 subscale.

Although the CCAPS-Japanese was translated through an elaborate and robust procedure, it is essential to follow up to verify the standardization of the CCAPS-Japanese. This research aimed to provide evidence of the instruments' convergent validity, social

desirability, and its test-retest reliability.

The selection of the validation scale was in accordance with Locke et al. (2011). Since the Beck Anxiety Inventory, Social Phobia Diagnostic Questionnaire, Student Adaptation to College Questionnaire, and Self-Report Family Inventory lacked Japanese versions, we selected alternative scales which have been translated in Japanese through discussion with Center for Collegiate Mental Health members. The time schedule of test-retest reliability study was also in accordance with Locke et al. (2011)[1].

Our a priori hypothesis was that the correlation between related subscales would be higher than for other subscales (i.e., Depression and Beck Depression Inventory-II, Eating Concerns and Eating Attitude Test, Hostility and State-Trait Anger Expression Inventory-Trait Anger, Social Anxiety and Liebowitz Social Anxiety Scale, Family Distress and Family Adaptability and Cohesion Evaluation Scales-III, Alcohol Use and Alcohol Use Disorders Identification Test, Generalized Anxiety and Penn State Worry Questionnaire, and Academic Distress and Daily Life Stressor Scale for University Students -Academic Distress).

Methods

Participants and Procedures

To examine the CCAPS-Japanese convergent validity and social desirability, participants were recruited from two Japanese universities: one national and one private. An in-class survey was distributed to undergraduates during the 2018 academic year by faculty members who were not involved with their academic evaluations; the students were informed that the study was also unrelated to their academic evaluation. To diminish the burden on the participants, the initial evaluations were divided between five groups, labeled with letters, as (a) Beck Depression Inventory-II, Eating Attitude Test, and State-Trait Anger Expression

Inventory-2, (b) Liebowitz Social Anxiety Scale, (c) Family Adaptability and Cohesion Evaluation Scales-III, (d) Alcohol Use Disorders Identification Test, and (e) Penn State Worry Questionnaire and Daily Life Stressor Scale for University Students, respectively. Thus, after providing informed consent, each of 1,627 participants was randomly assigned to one of the five groups, and each participant received a brief demographic questionnaire, the CCAPS-Japanese, and Marlowe-Crown Social Desirability Scale Short Version (MCSD) prior to the one, two or three validation scales. Therefore, our validation study questionnaire involved the CCAPS-Japanese and the MCSD, with different combinations of validation measures for different groups of individuals.

The Group (a) consisted of 132 females (40.1%), 195 males (59.3%), and two of unknown gender (0.6%) and the mean age was 18.39 years (*SD* = 1.03, range = 18–31), (b) consisted of 177 females (48.6%), 185 males (50.8%), and two of unknown gender (0.5%) and the mean age was 18.30 years (*SD* = 0.96, range = 18–28), (c) consisted of 137 females (37.1%), 222 males (60.2%), and 10 of unknown gender (2.7%) and the mean age was 18.88 years (*SD* = 1.09, range = 18–33), (d) consisted of 101 females (40.2%), 138 males (55.0%), and 12 of unknown gender (4.8%) and the mean age was 20.37 years (*SD* = 0.71, range = 20–25), and (e) consisted of 129 females (41.1%), 175 males (55.7%), and 10 of unknown gender (3.2%) and the mean age was 19.01 years (*SD* = 1.98, range = 18–28) (See also Table 1). Since Group (d) questionnaire asked for drinking experience, only Group (d) consisted of all students over 20 years old, the legal drinking age in Japan.

To examine the CCAPS-Japanese test-retest reliability, participants were recruited from two Japanese universities: one national and one private. An in-class survey was distributed to undergraduates during the 2018 academic year by faculty members who were not involved in their academic evaluation, and the students were informed that this study was also unrelated to their academic evaluation. No participants in the validity study were included in the reliability

study. After providing informed consent, 338 undergraduate students were each assigned to one of two groups. Two hundred and four participants were assigned to examine the one-week test-retest reliability of the CCAPS-Japanese, and 134 were assigned to examine the two-week test-retest reliability.

In the one-week study, 20 participants did not complete the second administration were excluded from the study, and so were 28 participants from the two-week study. The final sample sizes were 184 (one-week study) and 106 (two-week study). In the one-week group, the mean participant age was 19.84 years (*SD* = 3.10, range = 18-37). The group consisted of 125 females (67.9%), 52 males (28.3%), and 7 of unknown gender (3.8%).

In the two-week group, the mean age of participants was 19.03 years (*SD* = 1.04, range = 18-26). The group consisted of 53 females (50.0%), 52 males (49.1%), and 1 student of unknown gender (0.9%) (See also Table 1). Participants completed a brief demographic questionnaire and the CCAPS-Japanese with paper and pencil. Following an interval of 7 days (in the one-week condition) or of 14 days (in the two-week condition), they completed the same questionnaires again.

[Insert Table 1 about here.]

Measures

CCAPS-Japanese. The detail of CCAPS-Japanese was described previously(Horita et al., 2019). Briefly it was used to assess psychological symptoms over two weeks, consists of 55 items rated on a five-point Likert scale ranging from 0 (*not at all like me*) to 4 (*extremely like me*) and eight factor-derived subscales: Depression (11 items, e.g. “誰も自分のことを理解してくれないと感じる(I feel that I have no one who understands me)”), Eating Concerns (8 items, e.g. “食べはじめると止まらない(When I start eating I can't stop)”), Hostility (7 items, e.g. “怒りを抑えるのが難しい(I have difficulty controlling my temper)”), Social

Anxiety (6 items, e.g. “人目を気にしすぎる(I feel self conscious around others)”), Family Distress (6 items, e.g. “もっと自分の家族が仲良くしていたら良いのにと思う(I wish my family got along better)”), Alcohol Use (5 items, e.g. “酔っぱらうことが好きである(I enjoy getting drunk)”), Generalized Anxiety (9 items, e.g. “心配していることがたくさんある(There are many things I am afraid of)”), and Academic Distress (3 items, e.g. “授業へのやる気を維持するのが難しい(It's hard to stay motivated for my classes)”) (Horita et al., 2019). Higher scores reflect higher levels of distress or symptoms.

Beck Depression Inventory-II. The BDI-II (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961; Kojima et al., 2002) is a 21-item self-report measure designed to assess symptoms of depression. Its reliability and validity have been demonstrated. The items are all answered using a 4-point Likert-type scale ranging from 0 to 3. Its internal consistency was $\alpha = .88$ in group (a).

Eating Attitude Test. The EAT-26 (Mintz & O’Halloran, 2000; Mukai, Crago, & Shisslak, 1994) is a 26-item measure designed to assess problematic attitudes and behaviors related to eating, including restricting and binging behaviors, and is one of the most widely used self-report eating problem measures. The items are all answered using a 6-point Likert-type scale ranging from 1 to 6. Its internal consistency was $\alpha = .86$ in group (a).

State-Trait Anger Expression Inventory-2. The STAXI-2 (Ishihara, 2010; Spielberger, 1999) is a 57-item measure designed to assess the experience, expression, and control of anger in adolescents and adults. Since the CCAPS-Japanese Hostility subscale asks respondents to rate themselves over the previous 2 weeks, only the Trait Anger subscale (10 items) was used in the present analysis[2]. The items are all answered using a 4-point Likert-type scale ranging from 1 to 4. Its internal consistency was $\alpha = .89$ in group (a).

Liebowitz Social Anxiety Scale. The LSAS (Asakura, Inoue, & Sasaki, 2002;

Liebowitz, 1987) was used instead of the Social Phobia Diagnostic Questionnaire. The LSAS is a 24-item measure designed to evaluate fear and avoidance of 13 performance and 11 social situations over the previous week. The items are all answered on a 4-point Likert-type scale ranging from 0 to 3. The total fear scores (the sum of all 24 fear ratings) and total avoidance scores (the sum of all 24 avoidance ratings) were used in the present analysis. Their internal consistency was $\alpha = .91$ and .90, respectively, in group (b).

Family Adaptability and Cohesion Evaluation Scales-III. The FACES III (Olson, Portner, & Lavee, 1985; Tateyama, 2007) was used instead of the Self-Report Family Inventory. The FACES III is a 20-item measure designed to assess family function. The FACES III has two subscales: Family Cohesion and Family Adaptability. The items are answered on a 5-point Likert-type scale ranging from 1 to 5. The total score was used in the present analysis. As higher scores indicate higher levels of family functioning, the absolute value was used for consistency with other measures. This scale's internal consistency was $\alpha = .90$ in group (c).

Alcohol Use Disorders Identification Test. The AUDIT (Hiro & Shima, 1996; Saunders, Aasland, Babor, De la Fuente, & Grant, 1993) is a 10-item measure designed to help identify when drinking has become hazardous or harmful to a person's health. Its internal consistency was $\alpha = .78$ in group (d).

Penn State Worry Questionnaire. The PSWQ (Meyer, Miller, Metzger, & Borkovec, 1990; Motooka, Matumi, & Hayashi, 2009) was used instead of the Beck Anxiety Inventory. The PSWQ is a 16-item measure designed to assess generalized anxiety disorder. The items are answered on a 6-point Likert-type scale ranging from 1 to 5. Its internal consistency was $\alpha = .92$ in group (e).

Daily Life Stressor Scale for University Students. The DLSS (Shima, 1999) was used instead of the Student Adaptation to College Questionnaire. The DLSS is a 32-item measure designed to assess undergraduate students' stressors in their daily lives. Only the Academic

Distress subscale (8 items) was used in the present analysis. The items are answered using a 5-point Likert-type scale ranging from 0 to 4. Its internal consistency was α = .80 in group (e).

Marlowe-Crowne Social Desirability Scale Short Version. The MCSD (Kamimura, & Shimada, 1994; Reynolds, 1982) is a 13-item measure designed to assess social desirability in responding to questionnaires. The MCSD is answered as a forced choice (*Yes* or *No*). Its internal consistency in the group (a), (b), (c), (d), and (e) was α = .83–.91.

Statistical Analysis

To examine convergent validity and social desirability, Pearson product-moment correlations between the eight CCAPS-Japanese subscales and the various referent measures were calculated. This procedure was in accordance with Locke et al. (2011).

To examine test-retest reliability, two sets of Pearson product-moment correlation coefficients were calculated separately for the one-week and two-week groups. Each set comprised correlations between the test and retest scores on the individual CCAPS-Japanese subscales. This procedure was also in accordance with Locke et al. (2011).

Ethics Statement

The research project was approved by the Research Ethical Committee, Graduate School of Medicine, Gifu University, Japan (approval no. 28-320). All participants received detailed face-to-face explanations regarding the protocol before providing written informed consent. The participants were informed that their responses would remain confidential and anonymous.

Results

Characteristics of the CCAPS-Japanese Subscales according to Validation Study Samples

The means, standard deviations, and Cronbach's α of the CCAPS-Japanese subscales were shown in Table 2. Comparing the mean of CCAPS-Japanese subscales with ANOVA yield significant differences in the Generalized Anxiety (F (4,1622) = 4.60, $p < .001$, η^2 = .012), Eating Concerns (F (4,1622) = 2.60, $p < .05$, η^2 = .007), Hostility (F (4,1622) = 4.74, $p < .001$, η^2 = .012), Alcohol Use (F (4,1622) = 58.61, $p < .001$, η^2 = .127), and Academic Distress (F (4,1622) = 22.39, $p < .001$, η^2 = .052) subscale. The Cronbach's α of CCAPS-Japanese subscales in the group (a), (b), (c), (d), (e) were as follows: Depression = .86–.91, Generalized Anxiety = .76–.83, Social Anxiety = .76–.82, Eating Concerns = .80–.83, Family Distress = .73–.78, Academic Distress = .56–.67, Hostility = .84–.88, and Alcohol Use = .75–.88.

[Insert Table 2 about here.]

Convergent Validity and Social Desirability

Pearson product-moment correlations between CCAPS-Japanese subscales and the eight identified measures are presented in Table 3. The highest correlation for each CCAPS-Japanese subscale was found to exist with its referent measure; Depression and the BDI- II (r = .72), Eating Concerns and the EAT-26 (r = .64), Hostility and the STAXI-Trait Anger (r = .71), Social Anxiety and the LSAS-Fear (r = .55) and the LSAS-Avoidance (r = .42), Family Distress and the FACES III (r = .46), Alcohol Use and the AUDIT (r = .71), and Academic Distress and DLSS Academic Distress (r = .49), except for the Generalized Anxiety subscale and the PSWQ (r = .61). All the CCAPS-Japanese subscales showed a significant negative correlation with the MCSD (r = -.41– -.12).

[Insert Table 3 about here.]

Test-retest Reliability

For both the one-week and two-week groups, the correlations between the CCAPS-Japanese scores at test and retest were significant for all subscales (Table 4). Correlations

between test and retest scores in the one-week group ranged from .75 (Alcohol Use and Generalized Anxiety) to .86 (Eating Concerns). Correlations between test and retest scores in the two-week group ranged from .66 (Academic Distress) to .88 (Depression and Generalized Anxiety).

[Insert Table 4 about here.]

Discussion

The purpose of this study was to examine the validity and reliability of the CCAPS-Japanese. Extending the findings of the CCAPS-Japanese pilot study (Horita et al., 2019); the results of the present study indicate that the 55-item CCAPS-Japanese has acceptable-to-good convergent validity and adequate test-retest reliability.

As a result of verifying the homogeneity of each validation study samples, medium effect size was found in Alcohol Use subscale ($\eta^2 = .127$). It indicates that there is significant heterogeneity across the groups. A plausible reason for this founding could be that only Group (d) consisted of all students over 20 years, the legal drinking age in Japan, whereas the other groups mostly included under the age of 20. Alternatively, only minor effect sizes were observed for other subscales. Therefore, it is considered that homogeneity of the group was guaranteed in this survey.

Analysis of the CCAPS-Japanese subscales and their corresponding constructs showed their correlation coefficients were higher than those measured for all other constructs. The only exception was the Generalized Anxiety subscale. The peak correlation coefficients of the CCAPS-subscales ranged from .46 (Family Distress) to .72 (Depression).The results were generally consistent with the validation study of the CCAPS original version (Locke et al., 2011). Thus, the convergent validity of CCAPS-Japanese Depression, Eating Concerns,

Hostility, Social Anxiety, Family Distress, Alcohol Use, and Academic Distress subscales were established. The PSWQ, which measures generalized anxiety, had the highest correlation with the Social Anxiety subscale (r = .62) of the CCAPS-Japanese. However, the PSWQ showed almost the same correlation coefficient with the Generalized Anxiety subscale (r = .61) of the CCAPS-Japanese, so it was considered that the convergent validity of the Generalized Anxiety subscale had been demonstrated. The correlation coefficient of the Social Anxiety subscale was higher with LSAS Fear than LSAS Avoidance. This result suggests that social anxiety, as measured by the CCAPS-Japanese, evaluates more fear feelings than avoidance feelings for performance and social situations. As Locke et al. (2011) mentioned, the fact that all correlations between the MCSD scale and the CCAPS-Japanese subscales were negative suggests that participants who reported less distress also exhibited more socially desirable responding, which may cause a "minimizing" effect in this self-reported distress rating scale in Japanese university students. Overall, the results support the use of the CCAPS-Japanese as an appropriate scale for measuring its target constructs. Although, the Thai version of the CCAPS (Ratanasiripong et al., 2015) differs from the original version in the number and concept of subscales, the CCAPS-Japanese matches the original version. Therefore, the CCPAS-Japanese might be able to conduct an international comparative study with university students whose native language is English.

Test-retest reliability coefficients of the CCAPS-Japanese subscales were high over intervals of one and two weeks. Therefore, preliminary evidence for the stability of the CCAPS-Japanese subscale scores was demonstrated. This result was generally consistent with the test-retest reliability study of the original CCAPS version (Locke et al., 2011). However, the CCAPS asks participants to think about their own symptoms or situations "during the past 2 weeks." Given this procedure, it may natural that the correlations between two assessments in such a short-interval are significant and strong. As Locke et al. (2011) mentioned the stability

of the CCAPS-62 over longer periods of time should be examined to determine whether systematic changes might occur in the CCAPS subscales based on academic or societal events. Among the CCAPS-Japanese subscales, the Academic Distress subscale was the most likely to change over time. In Japan, university students must take many classes (90 minutes each) every semester to graduate from university. This trend is particularly noticeable in the lower grades. Some students attend more than 20 classes per week. Since the number and timing of assignments and tests vary from class to class, the stress levels of Japanese university students are likely to fluctuate over time. This educational style may have led to some instability of the Academic Distress subscale. However, the diploma, curriculum, and admission policy in higher education are changing as educational reforms focused on "Learning Outcomes" are promoted not only in Japan, but also in many countries (Kawashima, 2008). It is desirable to compare the stability of the Academic Distress subscale score with other countries.

The overall results establish new type of validity and reliability in the CCAPS-Japanese that provide the users with confidence that (a) each subscale measures the intended construct and (b) that measurement is relatively stable from week to week. These add to the growing knowledge of the CCAPS–Japanese, which will allow it to be more useful in clinical settings. Considering this information, future uses of the CCAPS may include monitoring psychological symptoms and evaluating the effects of counseling.

Although there are prevalence surveys to assess mental disorders or neurodevelopmental disorders among university students (i.e., Japan Student Services Organization, 2019; Japanese National University Council of Health Administration Facilities, 2015), academic status surveys such as the ratio of leaves of absence, withdrawal from university, and repetition of the same academic year among undergraduate and graduate students (Japanese National University Council of Health Administration Facilities, 2015), and basic statistics survey such as the average number of counselors, clients, and appointments per

institution (Suzuki et al., 2019), there are no nationwide data of the mental health status of college students in Japan. Since annual health checkups are provided for all students based on The School Health and Safety Act, it should be a good opportunity to administer the CCAPS-Japanese and to accumulate mental health data in Japan. This would provide Japanese university counseling centers the opportunity to build a large database and compare clinical and non-clinical data regarding university students' mental health.

Future Directions

There are four future directions for research in this area. First, a student's CCAPS-Japanese score at intake could be used for triage. Hardy, Weatherford, Locke, DePalma, & D'Iuso (2011) demonstrated significant reductions in wait time and increases in attendance when such triage systems were adopted. In addition, clients reported significantly less distress and crisis, and did not report increases in symptom severity after triage was implemented.

Second, changes in the CCAPS-Japanese score between pre- and post-treatment may be used to assess the significance and necessity of psychotherapy. If we show the effectiveness of our work by using the CCAPS, it is possible to utilize the data to advocate for increased resources and additional funding opportunities to be better equipped to address the demands placed on counseling centers (Youn et al., 2015). Although some counselors are hesitant to quantitatively evaluate the effectiveness of counseling using a questionnaire (Egami et al., 2016), Martin, Hess, Ain, Nelson, & Locke (2012) suggested that using the CCAPS on a repeated-measures basis facilitated and enhanced the counseling process for the majority of both counselors and clients. For example, counselors can use the CCAPS to follow-up on clients' progress, to help guide discussions of clients' concerns, to assist in conceptualizing client concerns, and to develop client goals. Clients also can use it to reflect on their progress over time, to talk about different things bothering them, and to self-monitor their symptoms.

Since most Japanese university counseling services do not have limits on the number of appointments per student, the CCAPS may be useful to follow students' long-term progress.

Third, future studies need to develop a short version of the CCAPS-Japanese to expand its clinical utility. It is recommended that the CCAPS-62 be used pre-post counseling or treatment, whereas the CCAPS-34 could be administered as frequently as possible during the course of counseling, optimally at every session (Youn et al., 2015). To verify a short version, studies confirming factor structure, validity, and reliability will be required.

Fourth, Japanese university students' mental health trends could be compared to those of university students from other countries using the CCAPS. The strength of the CCAPS is that it is translated into various languages, making it easy to conduct international comparative studies. Broglia, Millings, & Barkham (2017) described that the U.K. students showed higher clinical severity for all psychological symptoms compared to the U.S. students. If the mental health characteristics of Japanese students and international students studying in Japan compared to students in other countries could be described, Japanese university counseling centers may identify their specific mental health issues and help provide services to improve mental health problems.

Conclusion

The correlations between the CCAPS-Japanese subscales and the referent measures were significantly high, and the CCAPS-Japanese scores were stable over one- and two-week intervals. These results established the convergent validity and test-retest reliability for the CCAPS-Japanese. This provides a foundation for use of the CCAPS-Japanese in clinical settings and calls for additional research to expand its clinical utility and conduct international comparative studies.

Conflict of Interest

The authors declare no conflicts of interest associated with this manuscript.

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Footnotes

[1] Because the CCAPS measures are stable, but also change in response to events, we have to balance the concept of test/retest reliability with its ability to detect change. Given that our construct is mental-health distress, and that typical treatment for distress occurs in 1- to 2-week intervals, the expectation of stability for non-traits is over this same period of time (1 to 2 weeks).

[2] The "state" inventory is intended to mean literally "right now" whereas the "trait" inventory is meant to mean "over time" - and that the "trait" aspect can change. The "two weeks" reference of the CCAPS was determined to be a better match with the "over-time" reference of the “trait” rather than the "right now" structure of the “state”.

Tables

Table 1

Background Characteristics of Participants according to Each Group

Characteristics	Group (a) (N = 329)	Group (b) (N = 364)	Group (c) (N = 369)	Group (d) (N = 251)	Group (e) (N = 314)
Measure	CCAPS-Japanese MCSD BDI-II EAT-26 STAXI-2 (Trait anger subscale)	CCAPS-Japanese MCSD LSAS (Fear and Avoidance subscale)	CCAPS-Japanese MCSD FACES- III	CCAPS-Japanese MCSD AUDIT	CCAPS-Japanese MCSD PSWQ DLSS (Academic Distress subscale)
Sex					
Female (%)	132 (40.12)	177 (48.63)	137 (37.13)	101 (40.24)	129 (41.08)
Male (%)	195 (59.27)	185 (50.82)	222 (60.16)	138 (54.98)	175 (55.73)
Unknown (%)	2 (0.61)	2 (0.55)	10 (2.71)	12 (4.78)	10 (3.18)
Age					
Mean (*SD*)	18.39 (1.03)	18.30 (0.96)	18.88 (1.09)	20.37 (0.71)	19.01 (1.98)
range	18-31	18-28	18-33	20-25	18-22

Table 1 (continued)

Characteristics	1-week test-retest group (N = 184)	2-week test-retest group (N = 106)
Measure	CCAPS-Japanese	CCAPS-Japanese
Sex		
Female (%)	125 (67.93)	53 (50.00)
Male (%)	52 (28.26)	52 (49.06)
Unknown (%)	7 (3.80)	1 (0.94)
Age		
Mean (*SD*)	19.84 (3.10)	19.03 (1.04)
range	18-37	18-26

Note. CCAPS-Japanese = the Counseling Center Assessment of Psychological Symptoms-Japanese; MCSD = Marlowe-Crowne Social Desirability scale; BDI-II = Beck Depression Inventory-II; EAT-26 = Eating Attitude Test-26; STAXI-2 = the State-Trait Anger Expression Inventory-2; LSAS = Liebowitz Social Anxiety Scale; FACES III = Family Adaptability and Cohesion Evaluation Scales-III; AUDIT = Alcohol Use Disorders Identification Test; PSWQ = Penn State Worry Questionnaire; DLSS = the Daily Life Stressor Scale

Table 2

Characteristics of the CCAPS-Japanese subscales

	Group (a)			Group (b)			Group (c)		
Subscale	Mean	*SD*	α	Mean	*SD*	α	Mean	*SD*	α
Depression	0.94	0.72	0.89	0.99	0.66	0.86	0.99	0.73	0.89
Eating Concerns	1.11	0.70	0.81	1.22	0.70	0.80	1.25	0.75	0.82
Hostility	0.77	0.70	0.85	0.77	0.67	0.84	0.85	0.74	0.86
Social Anxiety	2.01	0.83	0.78	2.05	0.78	0.76	1.96	0.83	0.78
Family Distress	0.86	0.66	0.73	0.87	0.66	0.73	0.95	0.70	0.75
Alcohol Use	0.09	0.36	0.87	0.08	0.30	0.75	0.31	0.63	0.88
Generalized Anxiety	1.12	0.61	0.76	1.13	0.62	0.78	1.14	0.66	0.81
Academic Distress	1.26	0.74	0.56	1.20	0.70	0.56	1.52	0.77	0.57

Table 2 (continued)

Group (d)			Group (e)			η^2
Mean	*SD*	α	Mean	*SD*	α	
1.06	0.80	0.90	0.86	0.72	0.90	0.008
1.26	0.77	0.82	1.13	0.75	0.83	0.007
0.93	0.83	0.87	0.68	0.72	0.88	0.012
1.92	0.92	0.82	1.92	0.85	0.81	0.004
0.94	0.77	0.78	0.84	0.71	0.77	0.005
0.69	0.86	0.83	0.19	0.49	0.87	0.127
1.22	0.74	0.83	0.99	0.68	0.83	0.012
1.73	0.92	0.67	1.41	0.79	0.60	0.053

Note. η^2 = Effect size, small; $.01 \leqq \eta^2 < .06$, medium; $.06 \leqq \eta^2 < .14$, large; $.14 \leqq \eta^2$. Statistically significant differences were analyzed with analysis of variance. η^2 was small in Hostility, Generalized Anxiety, and Academic Distress subscale, medium in Alcohol Use subscale. α = Cronbach's alpha.

Table 3

Pearson Product - Moment Correlation Coefficients between the CCAPS-Japanese Subscales and Referent Measures

Measure	Depression	Eating Concerns	Hostility	Social Anxiety	Family Distress	Alcohol Use	Generalized Anxiety	Academic Distress
BDI-II	.72***	.29***	.56***	.41***	.29***	.31***	.60***	.40***
EAT-26	.35***	.64***	.30***	.20***	.22***	.16**	.37***	.19**
Trait Anger	.42**	.28***	.71***	.36***	.23***	.06	.44***	.30***
LSAS Fear	.40***	.24***	.25***	.55***	.13*	.06	.41***	.24***
LSAS Avoidance	.27***	.17**	.13*	.42***	.10	.10	.22***	.22***
FACES III	.16**	.09	.11*	.13*	.46***	.01	.09	.21***
AUDIT	.01	-.01	.14*	-.13*	.01	.71***	.00	.12
PSWQ	.52***	.32***	.42***	.62***	.28***	.00	.61***	.33***
DLSS A.D.	.31***	.31***	.28***	.23***	.25***	.13*	.33***	.49***
MCSD	-.33***	-.21***	-.41***	-.25***	-.26***	-.12***	-.33***	-.29***

Note. BDI-II = Beck Depression Inventory-II; EAT-26 = Eating Attitude Test-26; Trait Anger = Trait Anger subscale of the State-Trait Anger Expression Inventory-2; LSAS Fear = Liebowitz Social Anxiety Scale-Fear; LSAS Avoidance = Liebowitz Social Anxiety Scale-Avoidance; FACES III = Family Adaptability and Cohesion Evaluation Scales- III; AUDIT = Alcohol Use Disorders Identification Test; PSWQ = Penn State Worry Questionnaire; DLSS A. D. = Academic Distress subscale of the Daily Life Stressor Scale; MCSD = Marlowe-Crowne Social Desirability scale.

*$p < .05$, **$p < .01$, ***$p < .001$

Table 4

Test-Retest Reliability Coefficients for CCAPS-Japanese Subscales

	1-week test-retest group (N = 184)					2-week test-retest group (N = 106)				
	Time 1		Time 2			Time 1		Time 2		
Subscale	Mean	*SD*	Mean	*SD*	*r*	Mean	*SD*	Mean	*SD*	*r*
Depression	1.10	0.85	1.08	0.87	.82***	0.95	0.72	0.93	0.77	.88***
Eating Concerns	1.51	0.82	1.44	0.85	.86***	1.34	0.73	1.37	0.80	.83***
Hostility	0.88	0.77	0.87	0.84	.84***	0.79	0.71	0.74	0.67	.78***
Social Anxiety	1.95	0.89	1.82	0.87	.84***	1.97	0.82	1.81	0.86	.82***
Family Distress	0.90	0.75	0.88	0.74	.81***	0.83	0.59	0.82	0.62	.76***
Alcohol Use	0.35	0.65	0.33	0.65	.75***	0.28	0.58	0.26	0.58	.77***
Generalized Anxiety	1.21	0.75	1.16	0.78	.75***	1.19	0.71	1.09	0.73	.88***
Academic Distress	1.95	0.86	2.03	0.84	.79***	1.92	0.74	1.83	0.71	.66***

***p < .001